Paper No. 73

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DANIEL A. JAPUNTICH,
VAUGHN B. GRANNIS, HAROLD J. SEPPALA
and ANTHONY B. FERGUSON

Appeal No. 2003-1945
Application No. 08/240,877

HEARD: April 27, 2004

Before COHEN, FRANKFORT, and MCQUADE, Administrative Patent Judges.

MCQUADE, Administrative Patent Judge.

DECISION ON APPEAL

Daniel A. Japuntich et al. originally took this appeal from the final rejection (Paper No. 51) of claims 34 through 38, 40 through 74 and 78 through 81, all of the claims pending in the application. Upon consideration of the appellants' main brief (Paper No. 54), the examiner issued an Office action (Paper No. 56) reopening prosecution and entering superseding rejections of the claims. Implicitly requesting that the appeal be reinstated pursuant to 37 CFR § 1.193(b)(2)(ii), the appellants filed a supplemental brief (Paper No. 57) and a proposed amendment of

claim 66 (Paper No. 59). The examiner entered the amendment, issued an answer (Paper No. 60), noted a reply brief (Paper No. 62) filed by the appellants and forwarded the application to this Board for review of the current rejections of claims 34 through 38, 40 through 74 and 78 through 81.

This is the second appeal to this Board involving the instant application. The first appeal (1999-0274) resulted in a decision (Paper No. 31) adverse to the appellants.[1]

THE INVENTION

The invention relates to a filtering face mask having an exhalation valve. Representative claim 78 reads as follows:

78. A filtering face mask that comprises:
(a) a mask body that is adapted to fit over the nose and mouth of a person and that has a filtering layer for filtering air that passes through the mask body; and
(b) an exhalation valve that is attached to the mask body, which exhalation valve comprises:
(i) a valve seat that comprises an orifice, a seal surface surrounding the orifice, and a flap retaining surface; and
(ii) a single flexible flap that has a stationary portion and one free portion and a circumferential edge that includes stationary and free segments, the stationary segment of

[1] The patentability issues in the instant appeal differ significantly from those in the earlier appeal due to changes in the record involving the subject matter claimed by the appellants, the prior art relied on by the examiner to reject the claims and the argument and affidavit/declaration evidence submitted by the appellants to challenge the rejections.

the circumferential edge being associated with the stationary portion of the flexible flap so as to remain in substantially the same position during an exhalation, and the free segment of the circumferential edge being associated with the one free portion of the flexible flap so as to be movable during an exhalation, the free segment of the circumferential edge being disposed beneath the stationary segment when the valve is viewed from the front in an upright position;

the flexible flap being secured to the valve seat non-centrally relative to the orifice at the flap retaining surface, which flap retaining surface and seal surface are nonaligned and positioned relative to each other to allow for a cross-sectional curvature of at least the one free portion of the flexible flap when viewed from the side in a closed position, the nonalignment and relative positioning of the flap-retaining surface and the seal surface also allowing for the one free portion of the flexible flap to be pressed against the seal surface when a wearer of the mask is neither inhaling nor exhaling and to allow for the one free portion of the flexible flap to be lifted from the seal surface during an exhalation.

THE EVIDENCE

The examiner relies on the following items as evidence of obviousness:[2]

Shindel	1,701,277	Feb. 05, 1929
McKim	3,191,618	Jun. 29, 1965
Simpson et al., British Patent Document (Simpson)	2,072,516	Oct. 07, 1981

[2] On page 13 in the answer, the examiner mentions U.S. Patent No. 2,999,498 to Matheson, seemingly for the purpose of supporting the rejections on appeal. Matheson, however, is not included in the statement of any rejection. Where a reference is relied on to support a rejection, whether or not in a minor capacity, there is no excuse for not positively including the reference in the statement of the rejection. See In re Hoch, 428 F.2d 1341, 1342 n.3, 166 USPQ 406, 407 n.3 (CCPA 1970). Accordingly, we have not considered the teachings of Matheson in reviewing the merits of the examiner's rejections.

The appellants advance the following items as evidence of non-obviousness:

The 37 CFR § 1.132 Affidavit of David M. Castiglione dated and filed November 15, 1999 (part of Paper No. 33) (Castiglione I)

The 37 CFR § 1.132 Affidavit of David M. Castiglione dated February 2, 2001 and filed February 12, 2001 (part of Paper No. 42) (Castiglione II)

The 37 CFR § 1.132 Affidavit of Brian S. McGinley dated June 28, 2001 and filed July 9, 2001 (Paper No. 48)

The 37 CFR § 1.132 Declaration of John L. Bowers dated and filed December 10, 2001 (part of Paper No. 50)

The 37 CFR § 1.132 Affidavit of Frank J. Fabin dated and filed December 10, 2001 (part of Paper No. 50)

The 37 CFR § 1.132 Declaration of Robert Betts dated December 7, 2001 and filed June 6, 2002 (part of Paper No. 54)

THE REJECTIONS

Claims 34 through 36, 38, 40 through 74 and 78 through 81 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Simpson in view of McKim.

Claim 37 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Simpson in view of McKim and Shindel.

Attention is directed to the main, supplemental and reply briefs and to the answer for the respective positions of the

appellants and the examiner regarding the merits of these rejections.[3]

DISCUSSION

Simpson, the examiner's primary reference, discloses a respiratory face mask comprising a pouch 1-5 composed of at least one sheet of filtration-effective material and at least one sheet of backing material, a strap 10 for securing the pouch over the nose and mouth of a user, and an exhalation valve 12 positioned on the pouch adjacent the user's nose and/or mouth to prevent the build-up of water vapor in the filtration-effective material during exhalation. In one embodiment, the exhalation valve takes the form of a flap valve:

> [t]he flap valve 13 of Fig. 2 comprises a flexible circular flap member 15 of, for example, plastics material, which is arranged to cover and [close] valve openings 16 during inhalation and to flex away from those openings during exhalation. To allow flexing of the flap member 15 a part of its peripheral portion, a segment of the flap member, is fixed in position, the remaining part of the flap member being left free. The valve is fitted in an aperture in the mask and is held in place by a retaining ring 17 which engages the edge portion of that opening to provide an effective seal [page 2, lines 37 through 50].

[3] In the last Office action (Paper No. 56), claim 66 also stood rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. As this rejection has not been restated in the answer, we assume that it has been withdrawn by the examiner in view of the above noted amendment of claim 66.

The examiner (see pages 4 and 6 in the answer) concedes that the Simpson face mask does not respond to the limitations in independent claim 78, and the corresponding limitations in independent claim 81, requiring the flap retaining surface and the seal surface to be nonaligned and positioned relative to each other to allow for a cross-sectional curvature of at least the one free portion of the flexible flap when viewed from the side in a closed position, with the nonalignment and relative positioning of the flap retaining surface and the seal surface also allowing for the one free portion of the flexible flap to be pressed against the seal surface when a wearer of the mask is neither inhaling nor exhaling and to allow for the one free portion of the flexible flap to be lifted from the seal surface during an exhalation. To cure these shortcomings in Simpson, the examiner turns to McKim.

McKim discloses a reed valve with a curved seat for use in a two cycle "kart" engine to control the passage of the fuel-air mixture from the carburetor into the crankcase. Observing that such valves have a tendency to float or flutter when closing during high speed operation of the engine (see column 1, lines 13 through 24), McKim teaches:

> a valve A comprises a valve block 10 mounted over the intake port 11 of a generally conventional, air cooled,

> two-cycle engine block B. The latter consists of unitary engine cylinder portion 12 and crankcase portion 13. A valve reed 14, of spring sheet material, such as, for example shim stock, secured by an anchor bar 15 and screws 17 to a curved seat 18 formed on the inner or engine side of the valve block 10.
>
> The curvature of this seat 18 conforms to the normally flexed condition of the valve reed 14 when the latter is flexed laterally from its normally straight position as shown in FIG. 3. The valve reed thus bears throughout its length against the valve seat, with the seating bias at the free end of the reed as great as, or greater than, that throughout the remainder of the reed. Thus, the reed tends to seat quickly, effectively, and without float or bounce after each opening thereof. This provides greatly increased efficiency, particularly at high speeds, over a reed valve seated on a conventional flat seat [column 1, line 55, through column 2, line 2].

In proposing to combine Simpson and McKim to reject independent claims 78 and 81, the examiner concludes that

> [i]t would have been obvious to modify the flexible valve flap and seat of Simpson et al. (fig. 2) to be curved because it would have provided for quick effective seating without float or bounce after each opening as taught by McKim (col. 1, lines 64-72). Additionally, the combination of Simpson et al. as modified by McKim teach[es] the one free portion of the flexible flap being pressed toward the seal surface in an abutting relationship therewith when the wearer is neither inhaling or exhaling and being free to be lifted from the seal surface during an exhalation (page 2, lines 39-42 of Simpson et al. and fig. 1 of McKim) [answer, page 5].

As indicated above, McKim teaches that the floating/fluttering problem targeted by the reed valve disclosed therein arises during high speed operation of a two cycle engine.

The appellants' uncontroverted affidavit/declaration evidence (particularly Castiglione I, Bowers, Betts and Fabin) establishes that this problem does not occur in respiratory mask exhalation valves of the sort disclosed by Simpson. The appellants' evidence further establishes that the McKim reed valve is not suitable for use in a respiratory mask exhalation valve. Hence, even if McKim is assumed to be analogous art with respect to the subject matter claimed (the appellants argue and present evidence that it is not), the evidentiary showing proffered by the appellants belies any notion that it would have been obvious within the meaning of § 103(a) to combine Simpson and McKim so as to arrive at the subject matter recited in claims 78 and 81 for any reason, let alone the one advanced by the examiner. The examiner's additional citation of Shindel against dependent claim 37 does not overcome this deficiency in the basic Simpson and McKim combination. Thus, considered in its entirety, the evidence before us does not justify the examiner's conclusion that the differences between subject matter recited in independent claims 78 and 81, and dependent claims 34 through 38, 40 through 74, 79 and 80, and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.

Accordingly, we shall not sustain the standing 35 U.S.C. § 103(a) rejection of claims 34 through 36, 38, 40 through 74 and 78 through 81 as being unpatentable over Simpson in view of McKim, or the standing 35 U.S.C. § 103(a) rejection of claim 37 as being unpatentable over Simpson in view of McKim and Shindel.

SUMMARY

The decision of the examiner to reject claims 34 through 38, 40 through 74 and 78 through 81 is reversed.

REVERSED

IRWIN CHARLES COHEN Administrative Patent Judge	)	
	)	BOARD OF PATENT
	)	APPEALS AND
CHARLES E. FRANKFORT Administrative Patent Judge	)	INTERFERENCES
JOHN P. MCQUADE Administrative Patent Judge	)	

JPM/kis

3M INNOVATIVE PROPERTIES COMPANY
P. O. BOX 33427
ST. PAUL, MN 55133-3427